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Algebra, and other branches of the Mathematicks and Mechanicks, for the use of those that are studious in those Noble Arts, as well to direct in the best Methods, and to detect Erroneous adventures, for the behoof of generous Beginners, as for the satisfaction and further encouragement of them that have attain'd higher accomplishments.

Also, in each of these Volumes, hath been given the Breviate and Substance of such Philosophical Writings, as came abroad, and were thought of good worth. And all along we have interspers'd many Histories, Philosophical Observations and promiscuous Experiments.

And now, I think, we may take our Prospect, and see, that we have got more ground in our second Volume than in the first; and more yet in the third than in either of the former; whence we take the liberty to ominate well for the future. Yet in all this I assume nothing to my self, but give all what is due to the merits of my generous Correspondents. And all that have affections for Arts and Sciences may rejoyce to see the late Proficiency of the Ingenious and Nobler Students in both our famous Universities, and in all the Universities of Christendom. The Ingenious French have drawn the same Yoke with us, in publishing their Journal des Scavans; and the Romans have followed our Example in their Giornale de Letterati. And doubtless all Civil Nations, who have a Gust for useful knowledge, will, in good time, drive on this Example; and then, as the Light increaseth, and runs on, we shall in a like proportion become so many mutual Ayds to each other: And this will hopefully redound to the General good of Mankind.

I doubt not but the Reader will pardon the Prolixity of this Preface, since, as was promis'd, it is not onely Preface, but bears a part of my main business, which is, to excite and animate the Industry and free Communications of others; of some of whose Effects take for the present the Specimens following.

The Description

Of an Instrument invented divers years ago by Dr Christopher Wren, for drawing the Out-lines of any Object in Perspective.

See Fig. I. wherein *A*. is a small Sight with a short arm *B*. which may be turn'd round about, and mov'd up and down the small Cylinder *CD*. which is screw'd into the piece *ED*. at *D*. this
piece

piece *ED* moving round about the Center *E*; by which means the *Sight* may be remov'd either towards *R* or *F*.

EF is a *Rule* fastn'd on to the two *Rulers GG*, which *Rulers* serve both to keep the Square Frame *SSSS* perpendicular, and by their sliding through the square holes *TT*, they serve to stay the *Sight*, either farther from or nearer to the said Frame; on which Frame is stuck on with a little wax the paper *OOOO*, whereon the Picture is to be drawn by the *Pen I*. This *Pen I*, is by a small *Braß-handle V*, so fixt to the *Ruler HH*, that the point *I*, may be kept very firm, so as alwayes to touch the Paper.

HH, is a *Ruler*, that is alwayes, by means of the small strings *aaaabbbb*, mov'd *Horizontally*, or *Parallel* to it self; at the end of which is stuck a small Pin, whose head *P* is the *Sight*, which is to be mov'd up and down on the *Out-lines* of any Object.

The Contrivance of the *Strings* is this. The two *Strings aaa, bbb*, are exactly of an equal length. Two ends of them are fastn'd into a small Leaden *Weight Q Q*, which is mov'd in a *Socket* on the back side of the Frame, and serves exactly to counterpoise the *Ruler HH*, being of equal *weight* with it. The other two ends of them are fastn'd to two small Pins *H. H*, after they have been roled about the small *Pulleys N. MM. LL. KK*; by means of which *Pulleys* if the *Pen I*, be taken hold of and mov'd up and down the Paper, the *Strings* moving very easily, the *Rule* will always remain in an *Horizontal* position.

The manner of Using it is this: Set the *Instrument* on a Table, and fix the *Sight A*, at what height above the Table, and at what distance from the Frame *SSSS*, you please. Then, looking through the *Sight A*, and holding the *Pen I*, in your hand, move the Head of the Pin *P*, up and down the *Out-lines* of the Object, and the point *I*, will describe on the Paper *OOOO*, the Shape of the Object so tract'd.

Fig. I

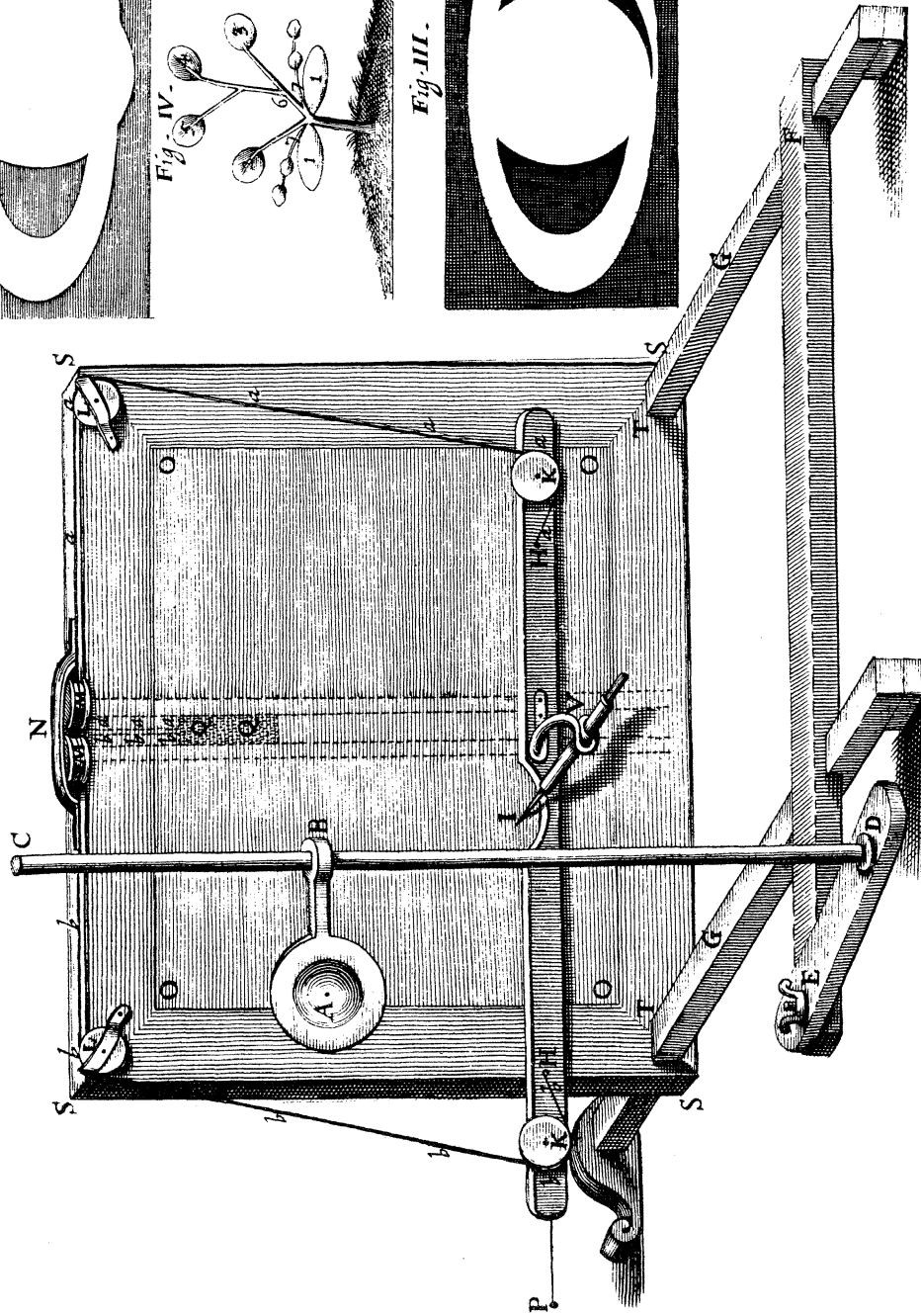


Fig. II.

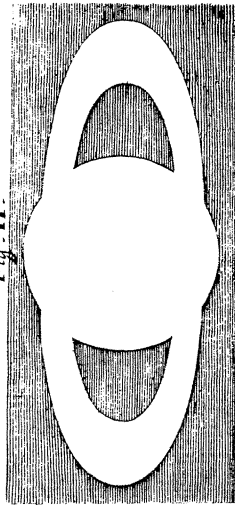


Fig. IV.

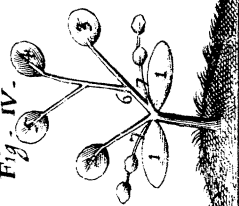


Fig. III.

